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In the Supreme Court of the United States

OCTOBER TERM, 1974

Supreme Court, U. S.
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C. MARSHALL DANN, COMMISSIONER OF PATENTS AND TRADEMARKS, PETITIONER

v.

THOMAS R. JOHNSTON

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

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INDEX

	Page
Opinion below	1
Jurisdiction	2
Questions presented	2
Constitutional and statutory provisions involved	2
Statement	3
Reasons for granting the writ	9
Conclusion	19
Appendix A	1A
Appendix B	23A
Appendix C	24A
Appendix D	37A

CITATIONS

Cases:

Anderson's-Black Rock, Inc. v. *Pavement Salvage Co.*, 396 U.S. 57	15, 16
Armour Pharmaceutical Co. v. *Richardson-Merrell, Inc.*, 396 F. 2d 70	14
Berardini v. *Tocci*, 190 F. 329, affirmed on the opinion below, 200 F. 1021	12
Brenner v. *Manson*, 383 U.S. 519	13
Davison Chem. Corp. v. *Joliet Chems., Inc.*, 179 F. 2d 793, certiorari denied, 340 U.S. 816	14
Exer-Genie, Inc. v. *McDonald*, 453 F. 2d 132, certiorari denied, 405 U.S. 1075	15
Funk Bros. Seed Co. v. *Kalo Inoculant Co.*, 333 U.S. 127	14
Gottschalk v. *Benson*, 409 U.S. 63	2, 7, 9, 11, 12, 13, 14, 16

569-016—75——1

	Page
Graham v. *John Deere Co.*, 383 U.S. 1	16, 19
Guthrie v. *Curlett*, 10 F. 2d 725	12
Hotel Security Checking Co. v. *Lorraine Co.*, 160 F. 467	12
Joseph E. Seagram & Sons, Inc. v. *Marzall*, 180 F. 2d 26	12
Kellogg Co. v. *National Biscuit Co.*, 305 U.S. 111	16
Loew's Drive-In Theatres, Inc. v. *Park-In Theatres, Inc.*, 174 F. 2d 547, certiorari denied, 338 U.S. 822	12, 14
National Lead Co. v. *Western Lead Prods. Co.*, 324 F. 2d 539	14
Old Town Ribbon & Carbon Co. v. *Columbia Ribbon & Carbon Mfg. Co.*, 159 F. 2d 379	15
O'Reilly v. *Morse*, 15 How. 62	11–12
Scott Paper Co. v. *Marcalus Mfg. Co.*, 326 U.S. 249	15–16
Zierden, Application of, 411 F. 2d 1325	15
Constitution, statutes and regulation:	
United States Constitution, Article I, Section 8, clause 8	2, 11
Patent Code:	
35 U.S.C. 101	3, 6, 11
35 U.S.C. 103	3, 7, 17
37 C.F.R. 1.196	6

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The Solicitor General, on behalf of the Commissioner of Patents and Trademarks, petitions for a writ of certiorari to review the judgment of the United States Court of Customs and Patent Appeals in this case.

OPINIONS BELOW

The opinion of the Court of Customs and Patent Appeals (App. A, *infra*, pp. 1A–22A) is reported at 502 F. 2d 765. The opinion of the Patent and Trademark Office Board of Appeals (App. C, *infra*, pp. 25A–36A) is not reported.

JURISDICTION

The judgment of the Court of Customs and Patent Appeals (App. B, *infra,* p. 23A) was entered on October 11, 1974. On December 12, 1974, the Chief Justice extended the time for filing a petition for a writ of certiorari to February 16, 1975. The jurisdiction of this Court is invoked under 28 U.S.C. 1256. *Gottschalk* v. *Benson,* 409 U.S. 63.

QUESTIONS PRESENTED

1. Whether this Court's holding in *Gottschalk* v. *Benson,* 409 U.S. 63, that a new idea to be implemented by programming an existing computer is unpatentable when claimed as a new "process," also applies when the programmed computer is claimed as a new "machine system."

2. Whether programs for existing general purpose digital computers, however claimed, are patentable under present law.

3. Whether respondent's idea of having banks provide an additional bookkeeping service by programming their computers to sort check and deposit data in accordance with category codes was in any event no more than an obvious improvement over prior art.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

Article I, Section 8, clause 8, of the Constitution of the United States provides:

> The Congress shall have Power * * *
>
> * * * * *
>
> To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries * * *.

35 U.S.C. 101 provides:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. 103 provides:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

STATEMENT

Respondent applied (R. 4)[1] for a patent on a system for using existing general purpose digital computers in conducting the banking business. The system permits a bank to offer checking account customers a bookkeeping service that not only provides the usual overall balance and activity statement, but also furnishes subtotals for various categories of debits and

[1] "R." refers to the record filed in the Court of Customs and Patent Appeals.

credits, such as rent or fuel, sales income or dividends, etc. Under respondent's system, the customer labels each check (or deposit slip) with an appropriate numerical category code for the type of transaction. The bank records this category code on the check (or deposit slip) in magnetic ink characters and stores the category data in the memory of the bank's computer, along with the other data normally associated with the transaction.[2] At the end of the monthly statement period, the bank's computer sorts the customer's transactions according to category codes, and causes information concerning each transaction and a subtotal to be printed out for each category (App. A. pp. 3A–7A, *infra*).[3] Respondent stated that his "invention is being sold as a computer program to banks * * * so that they can perform these data processing services for depositors" (*id.* at 19A).

[2] According to the patent application, banks use digital computers "for the handling of much of the record-keeping operations involved in a banking system" (R. 5). Typically, checks and deposit slips carry the following information (among other data) in magnetic ink (or other machine-readable) characters printed on them: customer's account number, amount of the transaction, and whether the transaction is a deposit (credit) or check (debit). This information is printed in magnetic ink to facilitate the processing of such data by the bank's computer. The applicant's system adds another such item: the code for the transaction category (rent, etc.), so that the computer can process this item along with the others (R. 6–7).

[3] The result is analogous to the customer's writing "rent," "fuel" or the like on each check as he draws it (or similarly marking each deposit slip) and, upon receipt of each monthly statement, sorting out the cashed checks and the deposit slips in each category into a separate pile and adding up the sub-totals for each pile.

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The patent application describes the necessary steps in the operation, contains flow diagrams for the operation of this type of program, and gives as an example a specific program for use on the IBM 1400 series general purpose digital computer. Respondent sought to patent the system both as a "process" and as a "machine system" or apparatus.[4] A typical "machine system" claim, set out in the opinion of the court below (*id.* at 5A–7A), in addition to describing the usual operations of such a computer, provides in substance:

> A record-keeping machine system for financial accounts, said system comprising a data processor (such as the IBM 1400) including the usual components, and having means for processing category-coded transaction data to compute subtotals for each category, as well as means for producing an output record of each category's subtotal.

The patent examiner rejected all the claims, and respondent appealed to the Patent and Trademark Office Board of Appeals. The Board rejected the claims on several grounds. It said that the claims were "not directed to improved record keeping machinery, but rather to a broad system of keeping financial records where the distinction over acknowledged prior record-keeping is either in the identity of the * * * institution which has custody of certain phases of the bookkeeping operation or in * * * the relationship existing between the various records," and the claims thus do not "spell out * * * any particular configuration of business machinery" (App. C., p. 29A, *infra*). Such claims do not define a statutory patentable ma-

[4] As used in the patent law, the terms "machine" and "apparatus" are synonymous.

chine, the Board stated, because the invention, if any, is only in the meaning (rent account, dividend account, etc.) given by the user to the pattern of electrical signals stored in the computer's memory. A A preexisting computer "operating with any given stored program is not a different machine simply because one chooses to denominate a section of its memory by a term descriptive of one meaning" rather than another (*id.* at 30A).[5]

The Board concluded that there was "no essential difference in substance" between the "machine system" or "apparatus" format used in the claims involved here and respondent's "process" claims able under 35 U.S.C. 101 (see p. 3, *supra*). The "machine system" or apparatus claims simply covered a conventional data processor having "'means' for performing conventional bookkeeping and accounting operations" (*ibid.*). The Board therefore held that the "machine system" claims and the process claims "must stand or fall together" (*ibid.*), and rejected them all as involving subject matter that is unpatentable under 35 U.S.C. 101 (see p. 3, *supra*). The Board also ruled that the claims were "obvious variations" (App. 34A, *infra*) of conventional bookkeeping systems and of a system previously disclosed in a prior patent (the Dirks patent, cited by the examiner) and hence were unpatentable under 35 U.S.C. 103 (see p. 3, *supra*).[6]

[5] The Board did not adopt the examiner's rejection and instead substituted its own (pursuant to 37 C.F.R. 1.196), deferring to the view of the Court of Customs and Patent Appeals "that an unprogrammed, or a differently programmed, general purpose computer is [not] the same machine as the one that would result from appellant's programming of the same or of a similar computer" (App. 28A, *infra*). The Board noted that the Examiner had apparently operated on the contrary "premise" (*ibid.*)

Subsequent to the Board's decision this Court decided *Gottschalk* v. *Benson,* 409 U.S. 63, holding unpatentable a claim for a "process" to be embodied in a program and used in a general purpose digital computer. On appeal to the Court of Customs and Patent Appeals, respondent abandoned its "process" claims and pressed only its alternative "machine system" claims.

The Court of Customs and Patent Appeals reversed 3-to-2, holding that *Benson* applied only to process claims and was not "applicable" to apparatus claims (App. 14A, *infra*). Because respondent's claims expressly purported to cover a "machine system," the court rejected the Board's conclusion that the application claimed subject matter that was unpatentable under Section 101 (*id.* at 13A–14A). *Benson* was

[6] The conventional systems to which the Board referred are multiple account systems by which banks carry "special," "trust," "escrow," or "personal" accounts for a single customer. By combining totals from the statements for each of the accounts into a single statement, the bank can readily furnish the customer the same kind of data as the applicant claims to do in his alleged invention (App. 34A–35A, *infra*). The Dirks patent claimed certain computer devices, but its introductory specification explained and disclosed, among other things, a cost accounting system for mercantile establishments. The Board considered it obvious to modify that system to implement respondent's idea since the only appreciable difference between the two ideas was whether they were employed in stores (Dirks) or banks (respondent) (App. 35A, *infra*).

569-016—75——2

also inapposite, in the court's view, because Benson's claims covered a mathematical formula or algorithm, in contrast with respondent's business or financial record-keeping system (*id.* at 14A). Finally, the court overturned the Board's rejection for obviousness because it did not regard respondent's alleged invention as "equivalent" to the prior art (*id.* at 15A–16A).

Chief Judge Markey dissented on the obviousness issue. The mere fact that differences existed between the prior art and the claimed advance, he said, did not suffice to make the advance unobvious (*id.* at 16A–17A).

Judge Rich dissented separately on the basis of *Benson* (*id.* at 17A–22A). Respondent's invention, if any, he said, was a program to be used in an existing general purpose digital computer. That the respondent's claims were cast in the language of a product claim format ("machine system" or "apparatus") rather than a process claim format was immaterial, since "[e]very competent patent draftsman knows how to do that," and Benson could readily have cast his process claims in "machine system" form similar to respondent's (*id.* at 20A). Judge Rich stated that the "legal doctrine that a new program makes an old general purpose digital computer into a new and different machine," on which the majority implicitly relied in its opinion, was a "legal fiction" which was not helpful in deciding whether a program claimed as such a "machine" was patentable in view of *Benson* (*id.* at 19A). Since the majority's distinctions between the instant case and *Benson* were not "realistic" and

were a matter of "form rather than substance," Judge Rich found *Benson* controlling and would have affirmed the rejection (*id.* at 21A–22A).

REASONS FOR GRANTING THE WRIT

The decision of the Court of Customs and Patent Appeals, by narrowly limiting the application of this Court's decision in *Gottschalk* v. *Benson, supra,* to "process" patents, permits and invites circumvention of that decision by the facile drafting device of claiming as a "machine system" an idea for programming computers that *Benson* held would be unpatentable if claimed as a "process" (see, *e.g.*, App. 37A, *infra*).[7] In holding that the Patent Office must grant a patent monopoly on such a machine system claim (if novel and unobvious), the decision conflicts not only with *Benson,* as to the patentability of computer programming, but also with other rulings of this Court and the courts of appeals that ideas are not patentable, whether claimed as processes or as products. Because of its immediate impact on computer programming, this decision would have a serious adverse effect on the computer industry and thus on the economy at large. More generally, the decision's implications could have a serious adverse effect on competition in the use of business and other ideas. To await infringement litigation to test the validity of such patents on computer programming would create serious and costly

[7] We have set out in Appendix D to this brief (p. 37A) the typical *Benson* claim printed at 409 U.S. 73–74, recast in respondent's "machine system" format.

uncertainty in industry and in the administration of the Patent Office.

1. (A) In considering inventions involving the use of digital computers it is useful to focus on three modes of activity: (1) formulating the ultimate purpose to be served by a computer operation; (2) implementating that purpose or idea by determining what data should be stored in the computer's memory or included in the input to the computer and what steps the computer should be instructed to take in processing the data; and (3) translating those instructions into a special form and "language" that the computer can "read." The term "program," while in a sense referring only to the product of the third phase, which typically involves a rather routine operation, is also used generically to encompass the second phase as well.

The inventiveness—the novel discovery—claimed by respondent does not lie in the preparation of a computer program, although respondent concedes that that is the commercially-exploitable fruit of the claimed invention (see p. 4, *supra*). Rather, it resides in the general idea or purpose which the computer would be programmed to implement, which idea (unlike the means for implementing it) respondent claims is sufficiently novel and unobvious to be patentable.

More specifically, respondent's claimed "invention" consists of the idea of having banks program and use their existing computers, by means of conventional programming techniques, to perform for their customers simple bookkeeping services that the customers either perform for themselves, hire a bookkeeper to perform, or else forego. The service consists of preparing balance statement subtotals for credits and debits in designated categories such as rent, fuel, dividends, sales income and the like. The "invention" is marketed to banks in the form of an appropriate computer program, which the banks can then use on their conventional general purpose digital computers (*e.g.*, the IBM 1400). The principal question presented is whether the court below properly held that this is the kind of "Discovery" contemplated by the patent clause of the Constitution and by 35 U.S.C. 101, on which a seventeen-year monopoly against the public may be granted.

(B) Ideas, however unobvious they may be, have always constituted "nonstatutory" and thus unpatentable subject matter. What is patentable is the specific and tangible application of those ideas to a specific use, in which the idea is concretely embodied in a novel and inventive machine, article of manufacture, chemical or other physical composition, or process for making or using such machinery, manufactures, or compositions. The rationale of the rule against patenting mere ideas is that hindering the free exchange and spread in use of mathematical and scientific ideas by an indiscriminate grant of patent monopolies would obstruct, rather than promote, "the Progress of Science and useful Arts" (U.S. Const., Art. I, Sec. 8, cl. 8).

Thus, this Court stated in *Benson* that "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work." 409 U.S. at 67; see *O'Reilly* v.

Morse, 15 How. 62, 112–113. The same principle has been applied to business ideas, because patents on methods of transacting business would be as destructive of competition as patents on scientific ideas would be destructive to scientific progress. See *Joseph E. Seagram & Sons, Inc.* v. *Marzall,* 180 F. 2d 26, 28 (C.A.D.C.) (denying patent on method of testing consumer product preferences).[8]

For example, the idea of the self-service cafeteria, like Morse's idea of transmitting information at a distance by means of electromagnetic force (see *Benson, supra,* 409 U.S. at 68), cannot be patented. See *Loew's Drive-In Theatres, Inc.* v. *Park-In Theatres, Inc.,* 174 F. 2d 547, 552 (C.A. 1), certiorari denied, 338 U.S. 822. No matter how novel, such ideas can be the basis for a patent, if at all, only in terms of and to the extent of, their embodiment in a novel machine, such as the Morse telegraph apparatus or the coin-operated food dispensing machine used in certain cafeterias, or in a novel process.

Respondent's claimed invention is not like a novel telegraph apparatus or any other piece of tangible machinery. The "means" disclosed by respondent are those of an ordinary general purpose digital computer, with a program directing the components of the com-

[8] The federal courts have repeatedly held that ideas for methods of doing business are not patentable. *E.g., Guthrie* v. *Curlett,* 10 F. 2d 725 (C.A. 2) (method of abbreviating rail tariff schedules); *Berardini* v. *Tocci,* 190 F. 329, 332–333 (S.D.N.Y.), affirmed on the opinion below, 200 F. 1021 (C.A. 2) (system of using code messages for banking transactions); *Hotel Security Checking Co.* v. *Lorraine Co.,* 160 F. 467, 469 (C.A. 2) (restaurant bookkeeping system).

puter to sort check and deposit data into different categories in the conventional way the computer performs such tasks, and then conventionally to print out the results of the sorting operation. Because respondent's idea, like Benson's, "has no substantial practical application except in connection with a digital computer," a patent on respondent's "machine system" would "wholly pre-empt" use of that idea and in "practical effect" be a patent on the idea. *Benson, supra,* 409 U.S. at 71–72.

As Judge Rich suggested in his dissent (App. 19A–20A, *infra*), respondent's claiming as a "machine system" of any and all "means" that will carry out the steps to implement his business idea is as if Benson had claimed, instead of a process, a machine system having means adapted to carry out the steps of the Benson mathematical idea. Even if that kind of description of a process may be a "machine" in a purely linguistic or rhetorical sense, it is not in any pragmatic and realistic sense; it is a "machine" devised by a patent application draftsman, not by a mechanic or artisan. Cf. *Brenner* v. *Manson,* 383 U.S. 519, 534. The only actual machine involved is the familiar general purpose digital computer.

In declaring *Benson* inapplicable simply because respondent's patent claim denominated his idea as a "machine" (while also calling it a "process") (see p. 5, *supra*), the court below elevated form over substance, thereby providing a simple means for circumventing the important principle applied in *Benson.* As in that case, respondent's idea involves, at best, merely a new use for an existing machine, and

that idea should no more be patentable when described as a new "machine system" than when described as a new "process," as in *Benson.*

(C) Even where an idea is not obvious, its implementation must be unobvious as well as to justify the grant of a patent monopoly, whether the implementation involves a process or a product. See, *e.g., Benson, supra,* 409 U.S. at 67–68; *Funk Bros. Seed Co.* v. *Kalo Inoculant Co.,* 333 U.S. 127, 130; *Armour Pharmaceutical Co.* v. *Richardson-Merrell, Inc.,* 396 F. 2d 70, 73–74 (C.A. 3); *National Lead Co.* v. *Western Lead Prods. Co.,* 324 F. 2d 539, 542 (C.A. 9); *Davison Chem. Corp.* v. *Joliet Chems., Inc.,* 179 F. 2d 793, 794–795 (C.A. 7), certiorari denied, 340 U.S. 816; *Loew's Drive-In Theatres, Inc.* v. *Park-In Theatres, Inc.,* 174 F. 2d 547, 551–552 (C.A. 1), certiorari denied, 338 U.S. 822.

The only elements of novelty associated with respondent's claimed innovation are: first, that a new program is inserted into the old computer, thereby programming the computer to perform a new set of routine steps; and, second, that a new set of meanings is associated with the numerical information being stored in the computer memory (*e.g.,* "rent" for the data concerning some checks, "dividends" for some deposits, etc.). Neither of these elements of novelty, jointly or independently, can turn the old general purpose digital computer underlying the claim here into a "new machine." Respondent's idea would be carried out in a conventional way on a conventional machine, and respondent has not claimed that the implemeta-

tion of his idea is unobvious or patentable.[9] The program implementing respondent's idea co-acts with an ordinary computer in an ordinary way; there is neither "synergism" between the program and the computer (see *Anderson's Black Rock, Inc.* v. *Pavement Salvage Co.,* 396 U.S. 57, 61), nor a newly-invented apparatus that helps carry out the program and with which the claimed monopoly is tied. Accordingly, no invention has been added to or combined with respondent's business idea to transmute it into a patentable process or product.

A new use of an old machine may be patentable as a process if the requirements of the precedents discussed in *Benson* are met (see 409 U.S. at 68–71). But the old machine cannot be claimed anew as a machine. See *Exer-Genie, Inc.* v. *McDonald,* 453 F. 2d 132, 134–135 (C.A. 9), certiorari denied, 405 U.S. 1075; *Old Town Ribbon & Carbon Co.* v. *Columbia Ribbon & Carbon Mfg. Co.,* 159 F. 2d 379, 382 (C.A. 2); cf. *Application of Zierden,* 411 F. 2d 1325, 1328–1329 (C.C.P.A.).

The general purpose digital computer exemplified here, the IBM 1400, is not respondent's creation. When IBM's patents covering this machine expire, their subject matter will fall into the public domain. See, *e.g., Scott Paper Co.* v. *Marcalus Mfg. Co,* 326

[9] The obviousness dispute in this case, over which Chief Judge Markey dissented, concerns the obviousness of the basic idea (see pp. 16–19, *infra*), *not* the means of implementing it.

569-016—75——3

U.S. 249, 255–256; *Kellogg Co.* v. *National Biscuit Co.,* 305 U.S. 111, 117. Under the decision of the court below, however, respondent would receive, in effect, a second and further partial monopoly on such machines, which *pro tanto* would withdraw from the public its right of "free access to materials already available." *Graham* v. *John Deere Co.,* 383 U.S. 1, 6; *Anderson's-Black Rock, Inc.* v. *Pavement Salvage Co., supra,* 396 U.S. at 61.

2. Alternatively, if the decision of the court below is not viewed as granting a patent on a mere business idea (which constitutes unpatentable subject matter), then it must be regarded as granting a patent covering the computer program required to implement respondent's idea. The grant of a patent on respondent's program, however, would, like the rejected claim in *Benson,* mean patenting a program for conventional use in a digital computer involving no use of new technology. See 409 U.S. at 71. Patents on programs like respondent's thus would cause the very problems cited by the Court in holding in *Benson* that "these programs" are not patentable under current law. 408 U.S. at 72–73.

Accordingly, the decision below creates the uncertainty and risk in this field that *Benson* sought to eliminate.

3. Even if it were assumed that respondent's idea for a new use of a bank's general purpose digital computer involved patentable subject matter, that idea would be "obvious" to one skilled in the art

and therefore unpatentable under 35 U.S.C. 103, contrary to the ruling of the court below.[10]

As the Board observed in rejecting respondent's claim as obvious (App. 34A–35A, *infra*), banks using existing data processing equipment frequently have several accounts for each customer, denominated as "special," "trust," "escrow," "personal," and the like. Each of these terms is comparable to a "category code" as called for by respondent's claims. Although the bank may, for some purposes, regard accounts so denominated as separate accounts of the customer, the bank's treatment of the accounts corresponds to respondent's idea for using category codes. In fact, respondent merely adds the category code to the end of the account number (*e.g.,* R. 281) to create, in effect, a series of differing and distinct account numbers to be used during the automatic data processing. Thus, under a different label, banks already provide a form of cost accounting facility, since the computer's bookkeeping, in handling a customer's separate special accounts, credits and debits the accounts and renders periodic summary statements to the customer. Respondent's printing of the summary sheets for all of a customer's special accounts on a single document, with totals for all accounts, is but an obvious convenience to the customer.

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[10] While the correctness of a ruling by the Court of Customs and Patent Appeals about whether a claimed invention was obvious would not usually warrant review standing alone, we include this among the questions presented in order to place the case before this Court in the full context of the somewhat interrelated issues decided by the court below.

The Board also relied on the Dirks prior art patent, which discloses a comprehensive automatic data processing system for different purposes in individual departments of a large business corporation.[11] His system is especially applicable to ledger-type bookkeeping or mercantile cost accounting, and allows personalized files for localized areas of responsibility. Each area is assigned an account number in which transaction and balance files are kept and updated. The bookkeeping is on a cost accounting basis, such as for sales of a product. Despite any superficial differences between mercantile cost accounting and bank bookkeeping, there is no fundamental difference in the data processing apparatus or methods used in respondent's claimed invention and in Dirks' patented invention. The equipment and methods are necessarily the same, whether the amount debited represents the value of merchandise or the value of a check.[12]

The differences between respondent's idea and the content of the prior art are so slight that it would have been obvious to a person of ordinary skill in devising uses for computers by banks to have banks provide an additional bookkeeping service by using category codes. Accordingly, the Court of Customs and

[11] The claims in the Dirks patent are directed to a particular structure which carries out the system disclosed, however, rather than, as here, only to the concept of the system.

[12] The finding of the court below that the claimed invention here is not the "equivalent" of Dirks' invention may be material in determining whether use of respondent's system would infringe Dirks' patent, but it does not suffice as a determination on the obviousness question and, indeed, indicates that the court below applied an erroneous standard. See also App. 17A, *infra*.

Patent Appeals erred in holding respondent's idea unobvious and thus patentable. See *Graham* v. *John Deere Co., supra*.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted.

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APPENDIX A

Application of Thomas R. Johnston, Patent Appeal No. 9088

United States Court of Customs and Patent Appeals,
Sept. 19, 1974

Applicant appealed from a decision of Patent Office Board of Appeals, Serial No. 624,741, which rejected apparatus claims 20–24 relating to an automatic financial record-keeping system which employs a digital computer. The Court of Customs and Patent Appeals, Baldwin, J., held that the appealed claims were improperly rejected for obviousness and for claiming nonstatutory subject matter and for failure to meet specificity requirements.

Reversed.

Markey, C. J., and Rich, J., dissented and filed opinions.

1. Patents ⇦118.3

Apparatus claims 20–24 relating to an automatic financial record-keeping system which employs a digital computer were in compliance with statutory requirements that subject matter of that which applicant regards as his invention be particularly pointed out. 35 U.S.C.A. § 112.

2. Patents ⇦118.3

Apparatus claims 20–24 relating to an automatic financial record-keeping system which employs a digital computer were not indefinite on theory that they purportedly encompassed a human being as part of the claimed apparatus. 35 U.S.C.A. § 112.

3. Patents ⇦7.14

Apparatus claims 20–24 relating to an automatic financial record-keeping system which employs a digital computer could not be rejected as claiming nonstatutory subject matter on theory that claims were not within the technological arts. 35 U.S.C.A. § 101.

4. Patents ⇦18

In determining whether or not applicant's record-keeping machine system was obvious variation of bookkeeping systems which were acknowledged by applicant to be known in the art, court was required to view prior art without reading into that art teachings of applicant. 35 U.S.C.A. § 103.

5. Patents ⇦18

Apparatus claims 20–24 relating to an automatic financial record-keeping system which employs a digital computer were not invalid for obviousness. 35 U.S.C.A. § 103; U.S.C.A. Const. Art. 1, § 8.

Morton C. Jacobs, Philadelphia, Pa., attorney of record, for appellant, McClure, Millman & Jacobs, Philadelphia, Pa., of counsel.

Joseph F. Nakamura, Washington, D.C., for the Commissioner of Patents, Jere W. Sears, Washington, D.C., of counsel.

Before MARKEY, *Chief Judge*, and RICH, BALDWIN, LANE and MILLER, *Judges*.

BALDWIN, *Judge*.

This appeal is from the decision of the Patent Office Board of Appeals rejecting claims 20–24 [1] of appellant's application.[2]

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[1] The board's decision concerned claims 1–11 and 16–27, but appellant has only appealed the rejection of claims 20–24.

[2] Serial No. 624,741, filed March 21, 1967.

THE INVENTION

Appellant's invention relates to an automatic financial record-keeping system which employs a digital computer. The application states:

> Automatic data processing equipments employing digital computers have been developed for the handling of much of the record-keeping operations involved in a banking system. The checks and deposit slips are automatically processed by forming those items as machine-readable records; that is magnetic ink characters are imprinted on the check, so that magnetic readers are enabled to process these checks and enter the data in a computer system in the form of coded electrical signals. Other character reading machines operating on an optical principle for automatically reading special optical type fonts are also employed. With such machine systems, most of the extensive data handling required in a bank can be performed automatically.
>
> It has been found that such data processing equipment, with certain additions and modifications, can be employed to process automatically much, if not all, of the individual record keeping required by a bank's customers to maintain their own personal and business financial records. That is, as a supplement to the conventional, periodic bank statement furnished to a bank customer, a record summary is provided with [sic] makes unnecessary much or all of the tedious bookkeeping and accounting that the customers would otherwise have to perform.
>
> * * * * *
>
> In accordance with an embodiment of this invention, an automatic record-keeping system is provided which is especially adapted for use with automatic banking devices for machine handling of the transactions (i.e. checks or deposits) of demand-deposit accounts of bank customers. Machine-readable records of each

569-016—75——4

bank transaction are generated directly on the check or the deposit ticket. The data of such records incorporate those required for conventional banking systems presently carried on checks (or deposit tickets); namely, the customer's account number, amount of the transaction, and the type of transaction (that is, whether a check or a deposit). Another set of data forming a machine-readable record is provided on each transaction, namely, a set of code characters that identify the bookkeeping classification of each transaction; this classification code is called the "category number." [e.g., categories indicating different sources of income for which deposits are made and categories indicating different types of expenses for which checks are written.] The category number is entered by the customer on each transaction slip (check or deposit) at the time it is prepared, in the form of a machine-readable record by means of an appropriate device, or in the form of a set of hand-written numeric characters which are converted to a machine-readable record by the customer's bank.

In the customer's bank, upon a deposit being made or a check clearing the bank, the machine-readable transaction records on the imprinted checks or deposit tickets are read by a suitable document-reader device and stored in a transaction file. To process the transaction file, the automatic record-keeping system employs a data processor, such as a programmable electronic digital computer, having certain data storage files and a control system. In addition to the transaction file, a master record-keeping file is used to store all of the records required for each customer in accordance with the customer's own chart of accounts. The latter is individually designed to the customer's needs and also constructed to cooperate with the control system in the processing of the customer's transactions. The control system directs the generation

of periodic output reports for the customer which present the customer's transaction records in accordance with his own chart of accounts and desired accounting procedures.

The control system is described as comprising a general control which is applicable to the processing operations that are common to most customers and a master control for the operations that vary on an individual basis with each customer. The general control, as allegedly reduced to practice, is in the form of a software program and the master control is a series of sub-files, one for each customer, which are in the form of a sequence of records containing suitable control mechanisms and the customer's financial data.

The application contains schematic block and flow diagrams of the entire apparatus including detailed descriptions of each diagram which set forth the interrelationships between all the disclosed elements of the apparatus. The application also discloses a print-out of a complete program and a detailed flow chart thereof for use with a known commercial general-purpose computer, the IBM 1400 series, to provide the special-purpose computer which forms the apparatus of appellant's invention.

Claim 20 is exemplary:

> 20. A record-keeping machine system for financial accounts, said system comprising a data processor including a memory for storing combinatorially coded signal records;
>
> a processor for combining and comparing the coded signals of said records;
>
> input and output devices;
>
> and a control system for supervising and directing said other parts of said data processor to perform a certain sequence of operations;
>
> said memory including a storage file of a plurality of machine-readable records formed of coded combinatorial signals, a master section of said file including a plurality of predeterminedly sequenced sub-files of said records, each said sub-file including a different signal group

record for a certain one of a plurality of account identifications, a plurality of predeterminedly sequenced different signal group records for different record-keeping category codes individually associated with reach of said account identification records, a plurality of different group records each for an amount total associated with a different one of said category records, and a plurality of totalizing operation records individually associated with certain pluralities of said category records and sequenced with the associated category records, a transaction section of said file including different pluralities of sub-files of said records, each of said transaction sub-files including one of said account identification signal group records, one of said associated category signal group records, and a separate transaction amount signal group record associated with each of said category records;

said control system including means for directing the processing of said files in accordance with the predetermined sequences of said master subfiles and of said category records of each sub-file, said processing directing means including means for locating in said master file section, for each of said transaction sub-files, that one of said category records corresponding to the transaction account identification record and the transaction category record and for augmenting the associated master amount total record by the amount records of the corresponding transaction sub-file; and

means for producing an output record for each of said master sub-files;

said output record producing means including means for identifying each of said master sub-file category records and for producing an output listing of the sub-file category codes and of the associated category amount total from said records, means for directing the accumulation of the amount totals of successive ones of

said category records, and means for identifying each of said totalizing records and for producing an output record of said accumulation of totals of the preceding category records. [paragraphing ours].

THE REJECTIONS

The examiner rejected all the claims in appellant's application under 35 U.S.C. § 112 and 35 U.S.C. § 102; however, the board did not consider the underlying bases for these rejections to be valid and did not sustain these rejections.[3] However, under the provisions of Rule 196(b), Rules of Practice in Patent Cases,[4] the board then entered five new rejections under the provisions of 35 U.S.C. § 112, 35 U.S.C. § 101, and 35 U.S.C. § 103.[5]

REJECTIONS UNDER 35 U.S.C. § 112

The board's first rejection of the claims is under the provisions of the second paragraph of § 112 in that the claims fail to particularly point out and distinctly claim that which appellant considers to be his invention.

The board stated:

[3] The board found that the examiner had based his rejections upon the premise "that an unprogrammed, or a differently programmed, general purpose computer is the same machine as the one that would result from appellant's programming of the same or of a similar computer." The board acknowledged that neither it nor this court considers that premise to be valid, obviously referring to In re Bernhart, 417 F. 2d 1395, 57 CCPA 737 (1969).

[4] 196. Decision by Board of Appeals

* * * * *

"(b) Should the Board of Appeals have knowledge of any grounds not involved in the appeal for rejecting any [appealed] claim, it may include in its decision a statement to that effect

[5] The appellant did not seek any reconsideration provided for by Rule 196(b) and appealed directly to this court.

Appellant * * * [in] his specification acknowledges that automatic data processing equipment has already been developed for the financial record-keeping and statement-furnishing operations of a bank so that the rendering of these services merely by some form of automatic data processing, not including appellant's improvements thereover, was not considered to be appellant's invention.

Turning now to the appealed claims, both apparatus and method,[6] we find them not directed to improved record keeping machinery, but rather to a broad system of keeping financial records where the distinction over acknowledged prior record-keeping is either in the identity of the person or institution which has custody of certain phases of the bookkeeping operation or in the financial meaning of, or the relationship existing between, the various records. Thus, the broad sweeping reference in the claims to the automation of the banking industry serves only as a dress for claims that

with its reasons for so holding, which statement shall constitute a rejection of the claims. The appellant may submit an appropriate amendment of the claims so rejected or a showing of facts, or both, and have the matter reconsidered by the primary examiner. The statement shall be binding upon the primary examiner unless an amendment or showing of facts not previously of record be made which, in the opinion of the primary examiner, avoids the additional ground for rejection stated in the decision. The applicant may waive such reconsideration before the primary examiner and have the case reconsidered by the Board of Appeals upon the same record before them. Where request for such reconsideration is made the Board of Appeals shall, if necessary, render a new decision which shall include all grounds upon which a patent is refused. The applicant may waive reconsideration by the Board of Appeals and treat the decision, including the added grounds for rejection given by the Board of Appeals, as a final decision in the case."

[6] The presently appealed claims 20–24 are all apparatus claims.

> spell out, in effect, the relationship of a bank and its customers, not any particular configuration of business machinery.

The board's second rejection under the provisions of § 112, second paragraph, was labeled indefiniteness. The board reasoned that portions of appellant's apparatus are defined as means for identifying an account or type of transaction and that this "identification of the meaning represented by a section of the computer memory is in the mind of the user and cannot define any characteristic of the apparatus." Relying upon the following passage from In re Foster, 438 F.2d 1011, 1015, 58 CCPA 1001, 1006, (1971):

> Judge Baldwin in the second Prater opinion [Application of Prater, 415 F.2d 1393, 56 CCPA 1381 (1969)] made it clear that means-plus-function language such as that used in the present apparatus claims does not encompass the human being as the "means" or any part thereof [,]

the board held the claims to be indefinite insofar as they purportedly encompassed a human being as a part of the claimed apparatus.

REJECTION UNDER 35 U.S.C. § 101

Under the provisions of § 101 the board rejected all the claims as claiming non-statutory subject matter. After reviewing the holdings of prior opinions of this court, *e.g.,* In re Foster, *supra;* and In re Musgrave, 431 F.2d 882, 57 CCPA 1352 (1970), which held that computer related inventions were "statutory" subject matter if they were within the "technological arts," the board inferred that computer related inventions which "extend beyond the field of technology

are not within the 'technological arts' and are non-statutory." After noting that the term " 'technological arts' should [not] embrace processes of using machines so as to dominate practices in the 'liberal arts,' such as social or political sciences, humanities, music and art," the board stated:

> A granting of the instant claims would, in effect, grant a monopoly to appellant on a method of conducting the banking business since banks would thereby be restricted to the use of their data processing equipment only for their own bookkeeping and not being allowed to freely expand into the business of keeping books for their customers.
>
> The granting of claims which would allow the intrusion of the patent system into the social sciences already under regulation by governmental agencies would exceed the constitutional grant of authority to issue patents in the "technological arts."

REJECTIONS UNDER 35 U.S.C. § 103

All the claims were further rejected under the provisions of § 103 as being "obvious variations of either the system of bookkeeping by banks that was acknowledged to be old by appellant * * * [in his] specification[7] or the system of bookkeeping of the Dirks patent[8] when applied to banking rather than industrial business."

The board noted that individual bank customers frequently have plural accounts, such as "trust" or "escrow" accounts, and that the names of these accounts is a "category code" as required by the claims. The

[7] This portion of the specification is reproduced in this opinion under *The Invention* section, *supra*.

[8] U.S. Patent No. 3,343,133, issued September 19, 1967, on an application filed August 9, 1963.

board acknowledged that, although a bank may regard those accounts as separate accounts, its treatment of those accounts is the same as that accorded appellant's different category codes, inasmuch as "the bookkeeping in the separate special accounts of a single customer correctly credits and debits the same and renders periodic summary statements of account to the customer." Therefore, the board opined:

> Merely printing the summary sheets for all the special accounts of an individual on a single document with totals for all accounts would be an obvious convenience to both the bank and the customer.

As to the rejection of the claims as unpatentable over the Dirks patent, the board stated:

> Dirks discloses a comprehensive automatic data processing system for many different purposes in networks of individual departments of a large business corporation * * *. This system allows personalized files for localized areas of responsibility * * *. Each area is assigned an account number in which transaction and balance files are kept and updated * * *. The bookkeeping is on a cost accounting basis * * * such as for sales of a product.
>
> There is no fundamental difference in a data processing apparatus or method because of the nature of the goods involved in a sales transaction. The bookkeeping apparatus and method would be the same no matter whether the amount debited represented the value of the merchandise or the value of the extended credit.
>
> Accordingly, it would have been obvious to a person of ordinary skill to use the cost accounting portion of the Dirks system of bookkeeping in the banking rather than the mercantile business.

OPINION

Considering first the rejections under the second paragraph of § 112, we find the instant apparatus claims to be in compliance with the requirements set forth in that section of the statute. These requirements were recently discussed by this court in In re Knowlton, 481 F. 2d 1357, (Cust. & Pat. App. 1973).

[1] In essence, the "failure to particularly point out and distinctly claim" rejection [9] is based upon the board's conclusion that the "relationship of a bank and its customers, not any particular configuration of business machinery", is being claimed. Upon reading the appealed *apparatus* claims we cannot perceive how any such "relationship" is being claimed. In typical means-plus-function language, which is expressly sanctioned by the third paragraph of § 112, the appealed *apparatus* claims are clearly drawn to a "record-keeping *machine* system for financial accounts" (emphasis added). Accordingly, we cannot sustain the board's rejection on its stated grounds.

[2] The board's rationale underlying its second rejection under § 112 for indefiniteness [10] appears to be the same as that found to be defective in In re Foster, *supra*. Here, as in *Foster*, we find the appealed *apparatus* claims clearly read only upon the subject matter which appellant regards as his invention—a "record-keeping *machine* system for financial accounts" (emphasis added)—not a human being inside or outside appellant's apparatus. Appellant's specification makes it quite clear that the claimed *apparatus* automatically performs the identifying operations referred to by the board; those operations are neither actually performed by a human being, nor can we imagine how they could be realistically performed by a human being. See In re Bernhart, *supra*. Thus, we cannot sustain this rejection on the board's stated rationale.[11]

[3] With regard to the rejection under § 101, we cannot agree with the board that the apparatus of the appealed claims is not within the "technological arts." [12] Record-keeping *machine* systems are clearly within the "technological arts." Such *machine* systems, which comprise programmed digital computers, are statutory subject matter under the provisions of § 101, and "claims defining them must be judged for patentability in light of the prior art." In re Bernhart, *supra*. Furthermore, we are not aware of, nor can we

[9] We note that although the "failure to distinctly claim" language used in the board's rejection connotes a rejection for indefiniteness, In re Knowlton, *supra*, the sole basis for its rejection was that appellant was claiming something—a relationship between a bank and its customer—other than what appellant regarded as his invention, *i.e.*, a failure to particularly point out the subject matter which appellant regards as his invention. Accordingly, we treat the rejection on this basis.

[10] Although the board held the claims to be indefinite, we again find the sole basis of the rejection was that appellant was claiming something—a human being—other than what appellant regarded as his invention. Thus, we also treat this rejection on this basis.

[11] The solicitor argues that the board had another basis for its indefiniteness rejection, namely that the means-plus-function recitations in the claims are indefinite for lack of any corresponding descriptions of structure in the specification upon which the scope of equivalents might be based in accordance with the third paragraph of § 112.

However, we cannot agree with the solicitor that the board set forth any such basis for its "indefiniteness" rejection. Furthermore, the thrust of this proposed rejection indicates that it would have been properly made under the *first* paragraph of § 112. See In re Comstock, 481 F.2d 905, (Cust. & Pat. App. 1973), In re Knowlton, *supra*. See *also* In re Bernhart, *supra*.

[12] "The phrase 'technological arts,' * * * is synonymous with the phrase 'useful arts' as it appears in Article I, Section 8 of the Constitution." In re Waldbaum, 59 CCPA 940, 457 F. 2d 997 (1972).

locate, any dictionary which would define a *machine* system as within the purview of the "liberal arts." [13]

The board's reluctance to "grant a monopoly to appellant on a method of conducting the banking business" is misplaced. The appealed apparatus claims are not drawn to cover either a method of doing business or even a method of bookkeeping. Nor would banks "be restricted to the use of their data processing equipment only for their own bookkeeping and not * * * [be] allowed to freely expand into the business of keeping books for their customers." Obviously, banks would be free to so expand their services and use any apparatus they may desire *except* the apparatus set forth in appellant's claims. We do not find that situation to be in conflict with Article I, Section 8, of the Constitution, since the "right to exclude others" is the very heart of our patent system.

Additionally, the solicitor argues that the holding in the recent opinion of the Supreme Court in Gottschalk v. Benson, 409 U.S. 63, 93 S. Ct. 253, 34 L. Ed. 2d 273 (1972) is logically applicable to the instant apparatus claims. However, as we stated in In re Christensen, 478 F. 2d 1392 (Cust. & Pat. App. 1973):

> The issue considered by the Supreme Court in *Benson* was a narrow one, namely, is a formula for converting binary coded decimal numerals into pure binary numerals by a series of mathematical calculations a patentable *process*? (emphasis added).

Furthermore, the instant claims in *apparatus* form, do not claim or encompass a law of nature, a mathematical formula, or an algorithm. For these reasons, we do not find the holding of *Benson* to be applicable to claims of the type now before us.

[13] We likewise do not agree with the board that banking is a "social science."

[4] Finally, we reach the rejections under § 103. In determining whether or not appellant's record-keeping machine system is an obvious variation of the bookkeeping systems which were acknowledged by appellant to be known in the art, "we must view the prior art without reading into that art appellant's teachings." In re Sponnoble, 405 F. 2d 578, 56 CCPA 823 (1969).

[5] We cannot agree with the board that the claimed "category codes" are equivalent to the account numbers of separate accounts that a customer may have with one bank. Appellant's "category codes" and account numbers [14] are two different types of controls, as appellant's specification and claims clearly point out. Furthermore, appellant's claimed invention produces a breakdown of a customer's income and expenditures associated with a *single* account and is not directed to the board's proposed modification of known data processing apparatus to provide a customer with merely a summary sheet consisting of net totals of plural separate accounts which a customer may have at a bank. Although it may possibly be obvious to modify known record-keeping apparatus to achieve a summary sheet of a plurality of separate accounts, as proposed by the board, we conclude that any further modification to such known apparatus, in order to achieve the results of appellant's claimed apparatus, would not have been obvious to one of ordinary skill in the art who did not have appellant's specification before him.

Turning to the obviousness rejection based upon the patent to Dirks, we conclude that this reference does not render the subject matter of the appealed claims obvious to one of ordinary skill in the art. The

[14] Claim 20 uses the terminology "account identifications" for account numbers.

four brief portions of the Dirks specification [15] referred to by the board and the additional passages of that specification called to our attention by the solicitor simply are not suggestive of the subject matter of the appealed claims. We find that, with appellant's specification before them, the board and solicitor have merely chosen various portions of the Dirks apparatus and have attempted to read them upon various elements set forth in appellant's claims. Furthermore, we note that the solicitor's interpretation of Dirk's apparatus creates substantially the same apparatus as that of the board's proposed modification of known data processing apparatus, *supra,* insofar as the solicitor interprets various *separate* accounts of Dirks as corresponding to appellant's claimed category codes. Accordingly, we cannot sustain this rejection.

For the foregoing reasons, the decision of the Patent Office Board of Appeals is reversed.

Reversed.

MARKEY, *Chief Judge* (dissenting).

I would affirm the decision of the board on its rejection under 35 U.S.C. 103. In that event, discussion of the rejections under 35 U.S.C. 112 and 101 becomes unnecessary. That we decline to discuss rejections which are thus rendered moot does not, of course, reflect in any way upon the validity or invalidity of such rejections.

The majority opinion finds differences between the claimed subject matter and the prior bank data processing system. Thereupon, the majority opinion appears to treat the obviousness rejection below as though it were based on 35 U.S.C. 102. There is no doubt, as the board recognized, that appellant's pro-

[15] We note that the Dirks patent comprised 509 pages of the instant Record.

grammed computer differs from the conventional programmed computers previously employed in banks. But the question under 35 U.S.C. 103 is whether appellant's programmed computers as claimed, i.e., his "record-keeping machine system," would have been obvious to those skilled in the art applicable to such record-keeping machine systems. In my view one skilled in the art, presented with the conventional machine system, would have found it obvious, without knowledge of appellant's disclosure, to have modified the system as set forth in the appealed claims.

Similarly, I regard the differences between the claimed subject matter and the relevant portions of the Dirks' patent to be such as to have rendered obvious the claimed subject matter as a whole at the time the invention was made. That only portions of the Dirks' specification are relied on by the board is of course, irrelevant if such portions do in fact render obvious the subject matter of the appealed claims. Whether or not Dirks discloses category codes or their equivalent would not appear to be the question. If it did, the rejection might well be under 35 U.S.C. 102. The question is whether the contribution of such category codes by appellant is a difference sufficient to render the claimed subject matter unobvious to one skilled in the applicable art. As above indicated, I differ from my brothers in the majority and would answer that question in the negative.

Thus, I find no clear error on the part of the board in its rejection of the appealed claims under 35 U.S.C. 103. In the absence of such clear error we must, and I would, affirm the decision of the board.

RICH, *Judge* (dissenting).

On the authority of Gottschalk v. Benson, 409 U.S. 63, 175 USPQ 673 (1972), I would affirm the rejection of the claims on appeal which was made by the board

under § 101, as requested by the Solicitor for the Patent Office.

The board's rejection was in these words:

> Under the provisions of Rule 196(b) this board herewith enters under 35 U.S.C. 101 a further rejection of claims 1 through 11 and 16 through 27 as for subject matter outside the patent statutes.

This is inclusive of claims 20–24 on appeal here. The board did not, of course, have the benefit of the Supreme Court's views in *Benson* because the board decision was on October 27, 1971, and *Benson* was not decided by the Supreme Court until November 20, 1972.

The Supreme Court held the process claims in *Benson* unpatentable under § 101. As the solicitor points out, appellant, in his main brief, ignored the Supreme Court *Benson* decision. In his reply brief he endeavors to deal with it—unsuccessfully, in my view. He attempts to distinguish on the ground that the claims here are directed to machines while *Benson* involved process claims. I think that will not suffice. Appellant has to concede that

> * * * the only resemblance of this case to *Benson* is that of the use of computer programs to embody the invention. Therein lies the rub, for appellee [the Patent Office] would deny patents for all software-embodied inventions.

The board, which was dealing with claims of appellant cast in both process and machine form, said the following, with which I agree:

> We see no essential difference in substance between these apparatus claims which define only broad means for performance of the steps of a data processing method and process claims 25, 26 and 27 which define the steps of the data processing method as being carried out by any conventional data processing machine. Hence, *we consider that both the apparatus and the method claims on appeal must stand or fall together.* [Emphasis added.]

I realize that claims 25, 26, and 27 are not on appeal but I do not take the board's comment as being restricted to them among the process claims. The point is that the machine or apparatus and process claims are really directed to the same invention, of which appellant's main brief says:

> * * * this invention is being sold as a computer program to banks and to other data processing companies so that they can perform these data processing services for depositors.

What could more clearly reveal the reality that the invention is a program—software—and that that is what appellant wants to protect by the appealed "machine system" claims? Appellant did not invent a machine—i.e., "hardware." Appellant's brief further states:

> This machine was reduced to practice in the software form of computer programs * * *.

I am quite familiar with the legal doctrine that a new program makes an old general purpose digital computer into a new and different machine. This court has been through that many times and I am not denying the validity of this principle—which partakes of the nature of a legal fiction when it comes to drafting claims. My problem is that, knowing the *invention* to be a new program, I must decide whether it is patentable in any claimed form in view of *Benson,* whether claimed as a machine, a "machine system," or otherwise. I am probably as much—if not more—confused by the wording of the *Benson* opinion as many others. What the Court *did* in its *decision* reversing the hold-

ing of this court that Benson and Tabbot's method claims were patentable subject matter under § 101 contains a message that is loud and clear. If those claims are not to patentable subject matter, neither, in my view, are the claims here, regardless of difference in form. Benson et al. had a program invention too and they could have cast their claims in machine system form just as appellant did. Every competent patent draftsman knows how to do that.

It seems to me important to focus on what the Supreme Court did in *Benson,* rather than on the specifics of its explanation of why it did. I have no idea what was in the collective mind of the six-justice Court in approving the statements:

> It is said that the decision precludes a patent for any program servicing a computer. We do not so hold. * * * It is said we freeze process patents to old technologies, leaving no room for the revelations of the new, onrushing technology. Such is not our purpose.

These are the comforting words to which some inventors of software and owners of software inventions look for solace. I find it more significant to contemplate the identities of the troops lined up for battle in *Benson* and observe which side obtained the victory. On the one side was the Government, against patenting programs or software, supported by the collective forces of major hardware (i.e., computer) manufacturers and their representative associations who, for economic reasons, did not want patents granted *on programs* for their machines. On the other side was Benson et al. and their assignee and assorted lawyers and legal groups who were in favor of patent protection for programs or software. The anti-patenting forces won the victory—if not an altogether clear one—and on the legal principle that the Benson et al. way of

programming a computer to do a particularly useful job of general applicability in the data processing field was the kind of invention the Supreme Court would not approve patenting without prior consideration by and specific authorization from the Congress. The major part of the rather brief and now famous "nut-shell" conclusion of the Court's opinion dwells heavily on this point.

I can find no realistic distinction in kind between the Benson et al. invention and the invention here and I conclude that the *Benson* decision requires us to affirm the rejection of claims 20–24 as directed to non-patentable subject matter under 35 U.S.C. 101. Holding that view, I find it unnecessary to consider the remaining four grounds of rejection discussed by my colleagues.

It has been suggested that the position I am taking is inconsistent with the position I have taken or the views I have expressed in others of the many carefully reasoned opinions of this court on the statutory subject matter question under 35 U.S.C. 101 which led to *Benson,* none of which was discussed or even recognized in the Supreme Court's *Benson* opinion. As a result, the value of those opinions as precedents has become unsettled.

It may well be that I seem to have been inconsistent. As the author of the opinion of this court in *Benson,* which was wholly reversed, I have not been persuaded by anything the Supreme Court said that we made a "wrong" decision and I therefore do not agree with the Supreme Court's decision. But that is entirely beside the point. Under our judicial system, it is the duty of a judge of a lower court to try to follow in spirit decisions of the Supreme Court—that is to say their "thrust." I do not deem it to be my province as a judge to assume an advocate's role and argue the right-

ness or wrongness of what the Court has decided or to participate in what I regard as the inconsistent decision here, supported by a bare majority which tries in vain, and only briefly, to distinguish *Benson* by discussing form rather than substance and various irrelevancies like pre-*Benson* decisions of this court, the banking business, social science, and the liberal arts. I deem it to be the Supreme Court's prerogative to set the limits on *Benson,* which was broadly based. I hope it will do so. As John W. Davis, erstwhile outstanding Solicitor General, once said, "The first requirement of any judicial opinion is utter clarity." [16]

[16] Harbaugh, Lawyer's Lawyer, The Life of John W. Davis, Oxford University Press, New York (1973), p. 108.

APPENDIX B

United States Court of Customs and Patent Appeals

Mandate No. 9088

In the Matter of the Application of Thomas R. Johnston. Serial No. 624,741

On Appeals from the Board of Appeals

This Cause having been heard and considered, it is ORDERED AND ADJUDGED: reversed.

Dated: September 19, 1974.

GEORGE E. HUTCHINSON,
Clerk, United States Court Customs and Patent Appeals.

A true copy Test:

Certified this 11th day of October 1974,

By: GEORGE E. HUTCHINSON

Docket Entry

October 11, 1974. Final Mandate issued to Commissioner of Patents.

APPENDIX C

Decision of Board of Appeals

October 27, 1971

EX PARTE THOMAS R. JOHNSTON

Application for Patent filed March 21, 1967, Serial No. 624,741. Machine System for Automatic Record Keeping of Bank Checks and Deposits

Before MAGIL, ANDREWS and STRADER, Examiners-in-Chief. ANDREWS, Examiner-in-Chief:

This is an appeal from the final rejection of claims 1 through 11 and 16 through 27. Claims 12 through 15 were withdrawn by the examiner from prosecution as the result of a requirement for election. No claim has been allowed.

Illustrative claim 1 is reproduced as follows:

> 1. A banking and record-keeping machine system for demand-deposit banking accounts, said system comprising a data processor including a memory for storing combinatorially coded signal records; a processor for combining and comparing the coded signals of said records; input and output devices; and a control system for supervising and directing said other parts of said data processor to perform a certain sequence of operations;
> said memory including a storage file of a plurality of said records, a first master section of said file containing a plurality of sub-files of said records predeterminedly arranged, each of said sub-files having a record identifying a different demand-deposit account number and identifying the balance of the corresponding

demand-deposit account, a second master section of said file containing a plurality of sub-files of said records each respectively associated with a different one of said account numbers and a plurality of records identifying record-keeping category codes and transaction totals respectively associated with said category codes, a transaction section of said file containing a plurality of records each identifying a transaction for a particular one of said accounts and for an associated category code and the amount thereof;
said input devices including means for supplying a plurality of machine-readable transaction records to said memory, each of said input records including means for identifying a particular one of said accounts and the amount and type of a transaction; said control system including means for directing the posting to said first master file section of successive ones of said input transaction records to modify the associated account balances in accordance therewith and for directing the updating of said transaction file section in accordance therewith, means for directing the generation at certain time periods of an individual output report for each account presenting the current balance thereof stored in said first master file section and the total amounts of transactions for each period, and means for directing the updating of said category totals of said second master sub-files in accordance with the records of said transaction file section and for directing the generation of another individual output report for each account at certain periods made up of said updated category totals.

The examiner relied on the following references:

Hopper et al.	3,274,554	Sept. 20, 1966
Tink et al.	3,308,439	Mar. 7, 1967
Dirks	3,343,133	Sept. 19, 1967
Best et al.	3,374,462	Mar. 19, 1968
Looschen et al.	3,407,387	Oct. 22, 1968

The invention pertains to a system for conducting a banking business in which the bank offers to its demand deposit (checking) account customers an individual bookkeeping service that allows a categorization of each credit or debit transaction by each customer. In addition to the periodic rebalancing of the customer's account for the internal use of the bank in honoring checks drawn on the account, the bank keeps records of the individual transactions and periodically renders a statement listing each transaction and stating the balance of the account. Also periodically the bank renders another statement to each customer listing the transactions under each category with its total and balance.

Appellant proposes to use a central programmed, general purpose, electronic computer to mechanically process the data so as to carry out the individual's, as well as the bank's bookkeeping systems. Although the application discloses that which purports to be a detailed machine readable program for a computer that is identified by its trade name, the details thereof are not brought into issue in this appeal by reason of the character of the claims presented, which are either to a method of bookkeeping that broadly utilizes automatic bookkeeping machinery of any character or to apparatus that automatically carries out, by any form of mechanism, the steps of the bookkeeping method.

Claims 1 through 8, 10, 11 and 16 through 24 have been rejected under 35 U.S.C. 112 but claim 9, which depends on claim 8, was neither included nor excluded from the rejection on this section of the statute. Since the rejection clearly is as applicable to claim 9 as to its parent claim and since appellant in his brief so treats this claim, we shall likewise construe the examiner's rejection as being applied to claims 1 through 11 and 16 through 24.

Claims 1 through 11 and 16 through 24 stand rejected under 35 U.S.C. 112, presumably the second paragraph thereof, for failure to particularly point out and distinctly claim the subject matter which appellant considers to be his invention and under 35 U.S.C. 112, presumably the third paragraph thereof, as claiming the use of a known machine in "means-plus-function" language.

Claims 1 through 11 and 16 through 24 stand further rejected under 35 U.S.C. 102 as fully anticipated by the apparatus of anyone of Hopper et al., Tink et al., Dirks or Best et al., and claims 25 through 27 stand further rejected as fully anticipated by the method of either Tink et al. or Looschen et al.

This board considers the issues raised by the two separate rejections under 35 U.S.C. 112 and the two rejections under 35 U.S.C. 102 so interrelated that they should be considered together. The bases for these rejections appear to be the premise by the examiner that an unprogrammed, or a differently programmed, general purpose computer is the same machine as the one that would result from appellant's programming of the same or of a similar computer.

Since neither the Court of Customs and Patent Appeals nor this board considers this premise to be valid, each of the rejections advanced by the examiner is not sustained.

NEW REJECTION

Under the provisions of Rule 196(b) this board enters the following new rejection:

Claims 1 through 11 and 16 through 27 are rejected herewith under 35 U.S.C. 112, second paragraph, as failing to point out and distinctly claim that which appellant considers to be his invention.

Page 3, first paragraph, of appellant's specification states:

> "Accordingly, it is among the objects of this invention to provide a new and improved machine system for automatic record keeping."

Appellant on page 2 of his specification acknowledges that automatic data processing equipment has already been developed for the financial record-keeping and statement-furnishing operations of a bank so that the rendering of these services merely by some form of automatic data processing, not including appellant's improvements thereover, was not considered to be appellant's invention.

Turning now to the appealed claims, both apparatus and method, we find them not directed to improved record keeping machinery, but rather to a broad system of keeping financial records where the distinction over acknowledged prior record-keeping is either in the identity of the person or institution which has custody of certain phases of the bookkeeping operation or in the financial meaning of, or the relationship existing between, the various records. Thus, the broad sweeping reference in the claims to the automation of the banking industry serves only as a dress for claims that spell out, in effect, the relationship of a bank and its customers, not any particular configuration of business machinery.

Under the provisions of Rule 196(b) claims 1 through 11 and 16 through 27 are further rejected herewith under 35 U.S.C. 112, second paragraph, for indefiniteness in failing to distinctly point out the invention.

Each of the claims on appeal, both method and apparatus, purports to identify record storing portions of the apparatus or method steps, only by the particular financial meaning to be accorded this data. This

meaning in no way can define either the construction of the data storing apparatus or the machine processing steps thereof.

There can be no structural or operational relationship of a computer memory with the meaning one chooses to assign outside the computer to a particular configuration of binary digits or "bits" in its memory. Although a group of such bits is processed as an alphanumeric character within the computer this results from the physical states of the memory cells and manifestly this is unrelated to whether a series of such characters represents a stock number of a part or a sum of money, outside the computer. A computer operating with any given stored program is not a different machine simply because one chooses to denominate a section of its memory by a term descriptive of one meaning, such as a file of stock numbers rather than a file of sums of money.

In the appealed claims certain of appellant's disclosed apparatus are defined only as a "means for identifying" an "account," an "amount," or a "type of transaction." The only identification of the meaning represented by a section of the computer memory is in the mind of the user and cannot define any characteristic of the apparatus.

In *In Re* Foster et al., 169 USPQ 99, at 101, the court stated:

> Judge Baldwin in the second Prater opinion made it clear that means-plus-function language such as that used in the present apparatus claims does not encompass the human being as the "means" or any part thereof.

Since appellant purports to embrace by his claims, as a part of the apparatus included in his apparatus claims or as a part of the apparatus steps of his method claims, that which now has been held to be outside the

scope of apparatus, these claims are thereby indefinite under 35 U.S.C. 112.

Under the provisions of Rule 196(b) this board herewith enters under 35 U.S.C. 101 a further rejection of claims 1 through 11 and 16 through 27 as for subject matter outside the patent statutes.

In re Musgrave, 57 CCPA 1352, 431 F. 2d 882, 167 USPQ 280; *In re* Foster et al., *supra; In re* Benson et al., 169 USPQ 548, all found that certain data processing computer systems were within the patent statutes if they were in the "technological arts."

At least by implication, those systems which do extend beyond the field of technology are not within the "technological arts" and are non-statutory.

These cases, although introducing the term "technological arts" into the consideration of what is, or is not, statutory subject matter for a patent shed little light on what is comprehended by that term.

Musgrave held that processing of data for correcting seismograms was in the "technological arts," not withstanding the charge by a minority of the court of the legal problems in interpreting the meaning of this term which was undefined by the majority.

Foster et al. adopted the holding in Musgrave without further indication of what is a "technological art."

Benson et al. ruled that computing machines as well as other types of "business machines" to be in the "technological field" and that processes that enhance the internal operations of such machines to be in the "technological or useful arts." This decision indicates that "liberal arts" are to be excluded from the "useful arts" and, hence, innovations directed thereto are non-statutory.

A dictionary definition of "technological" is found to be "* * * improvement in technical processes that

increase the productivity of machines and eliminate manual operations."

From this, we conclude that "technological arts" include machines or improvements thereof that replace manual effort as well as processes for using or operating those machines which enhance or increase machine productivity.

We find no support for the conclusion that "technological arts" should embrace processes of using machines so as to dominate practices in the "liberal arts," such as social or political sciences, humanities, music and art. The use of machines merely as a conduit or channel for expressing creative effort in the "liberal arts," with no concern for the enhancement of the internal functioning of the machine, goes beyond the "technological arts." Such uses of machines outside the "technological arts" would include recording a political speech via sound motion pictures, printing a literary work by a paper tape controlled typewriter, transcribing by way of magnetic tape an original musical composition, weaving an original textile design on a pattern controlled Jacquard loom or programming a general purpose computer to make the strategic moves in a game of chess or predict the outcome of an election or the activity of the stock market.

In each of these, the machine that is employed operates exactly as it was constructed and without any consideration for any enhancement of the machine but literally, of course, such machines have never been so used before and, hence, the use is novel within the language of 35 U.S.C. 101 and is as unobvious under section 103 as are the political, literary, musical, artistic or strategic concepts presented to the machines. Granting a patent on such uses of a machine, even though both novel and unobvious would

be granting a monopoly outside the "technological arts."

On page 2 of the instant specification it is acknowledged that the keeping of financial records of banks has been done with automatic data processing equipment employing digital computers and that the bank's customers customarily have and maintain their own bookkeeping and accounting systems.

The claims on appeal simply specify that the bank will perform the bookkeeping and accounting services for its customers, rather than each customer performing his own.

Although the format of many of the appealed claims expresses the invention in apparatus form as a conventional data processor that has a number of data files, each file is identified only as to its role in the bookkeeping and accounting system, in association with "means" for performing conventional bookkeeping and accounting operations on the data files. All of this is without regard to the particular apparatus used to perform these operations and certainly with no "enhancement" of the machine operation spelled out. We see no essential difference in substance between these apparatus claims which define only broad means for performance of the steps of a data processing method and process claims 25, 26 and 27 which define the steps of the data processing method as being carried out by any conventional data processing machine. Hence, we consider that both the apparatus and the method claims on appeal must stand or fall together.

A granting of the instant claims would, in effect, grant a monopoly to appellant on a method of conducting the banking business since banks would thereby be restricted to the use of their data processing equipment only for their own bookeeping and not

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being allowed to freely expand into the business of keeping books for their customers.

The granting of claims which would allow the intrusion of the patent system into the social sciences already under regulation by governmental agencies would exceed the constitutional grant of authority to issue patents in the "technological arts."

Under the provisions of Rule 196(b) claims 1 through 11 and 16 through 27 are herewith rejected under 35 U.S.C. 103 as for obvious variations of either the system of bookkeeping by banks that was acknowledged to be old by appellant on page 2 of the specification or the system of bookkeeping of the Dirks patent when applied to banking rather than industrial business.

As is well known, demand-deposit customers of a bank using prior art data processing equipment as described by appellant at page 2 of his specification, frequently have plural accounts for one individual customer. These accounts are frequently denominated as "special," "trust," "escrow," "personal" and the like. Each of these terms is a "category code" as called for by the appealed claims. Although the bank may, for some purposes, regard these accounts so denominated as separate accounts, the bank's treatment thereof is no different than appellant accords the different category codes. In fact, appellant in his treatment merely adds the category number to the end of the account number to create, in effect, a series of different and distinct account numbers to be used during most of his automatic data processing. Thus, under a different label banks already provide its customers with a form of cost accounting facilities since the bookkeeping in the separate special accounts of a single customer correctly credits and debits the same and renders periodic summary statements of account

to the customer. Merely printing the summary sheets for all the special accounts of an individual on a single document with totals for all accounts would be an obvious convenience to both the bank and the customer.

Dirks discloses a comprehensive automatic data processing system for many different purposes in networks of individual departments of a large business corporation (column 6, line 35). This system allows personalized files for localized areas of responsibility (column 7, line 40). Each area is assigned an account number in which transaction and balance files are kept and updated (column 9, lines 21–64). The bookkeeping is on a cost accounting basis (column 18, line 62) such as for sales of a product.

There is no fundamental difference in a data processing apparatus or method because of the nature of the goods involved in a sales transaction. The bookkeeping apparatus and method would be the same no matter whether the amount debited represented the value of the merchandise or the value of the extended credit.

Accordingly, it would have been obvious to a person of ordinary skill to use the cost accounting portion of the Dirks system of bookkeeping in the banking rather than the mercantile business.

The rejection of claims 1 through 11 and 16 through 27 is reversed and new rejections under Rule 196(b) of claims 1 through 11 and 16 through 27 have been entered.

Any request for rehearing or reconsideration or modification of this decision by the Board of Appeals based upon the same record must be filed within thirty days from the date of the decision. (Rule 197). Should appellant elect to have further prosecution before the examiner in response to the new rejection under Rule

196(b) by way of amendment or showing of facts, or both, not previously of record, a shortened statutory period for making such response is hereby set to expire *thirty days* from the date of this decision.

APPENDIX D

Claim 8 in *Gottschalk* v. *Benson,* 409 U.S. 63, 73–74, Revised to Read as a Machine System [1]

[The method of] *A machine system for* converting signals from binary coded decimal form into binary which comprises [the steps of]

(1) *a reentrant shift register for* storing the binary coded decimal signals [in a reentrant shift register],

(2) *Means for* shifting the signals to the right by at least three places, until there is a binary "1" in the second position of said register,

(3) *means for* masking out binary "1" in said second position of said register,

(4) *means for* adding a binary "1" to the first position of said register,

(5) *means for* shifting the signals to the left by two positions,

(6) *means for* adding a "1" to said first position, and

(7) *means for* shifting the signals to the right by at least three positions in preparation for a succeeding binary "1" in the second position of said register.

[1] Words added are in italics; deleted words are in brackets.